In the claims:

1. (Currently amended) A device, comprising an optical disk-shaped resonator, which is in the shape of a disc, formed of [[an]] a silicon core portion in a silicon material, and a cladding layer surrounding said silicon core portion, said cladding layer made of an optically active material~~, said cladding layer~~ and configured to amplify optical energy that is guided in said silicon core portion, and said silicon material fabricated to include a microelectronic structure.

2. (Original) A device as in claim 1, further comprising a pump laser, optically pumping said cladding layer.

3. (Previously presented) A device as in claim 2 wherein said cladding layer is an erbium doped portion of material.

4. (Canceled)

5. (Currently amended) A device as in claim 1 wherein said optically active material is made of a semiconductor material.

6. (Canceled)

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7. (Currently amended) A device as in claim 1 further comprising a pumping laser which pumps the cladding layer to cause lasing at a resonant wavelength in said silicon core ~~produce spontaneous emission from the core~~.

8. (Currently amended) A method of amplifying light, comprising:

introducing light into an inactive silicon waveguide core of an optical disk shaped resonator which has an optically active waveguide cladding for said inactive silicon waveguide core; and

optically pumping the optically active waveguide cladding to amplify ~~amplifying~~ the light guided in said inactive silicon waveguide core in the optical disk shaped resonator.

9. (Currently amended) A method as in claim 8 wherein said waveguide core and said waveguide cladding are configured to cause a high confinement factor in said waveguide cladding to achieve a high optical gain in amplifying the light ~~amplifying comprises amplifying the light until spontaneous emission is caused~~.

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10. (Previously presented) A method as in claim 8 wherein said amplifying comprises using a pump laser to pump a doping in a core portion of the optical resonator.

11 - 15 (Canceled)

16. (Currently amended) A laser comprising an optical disk shaped resonator, formed of an ~~inner active~~ inactive core material surrounded by an active ~~clad~~ cladding material, and a pump laser which drives said active ~~clad~~ cladding material until lasing occurs in said optical resonator ~~spontaneously emits light~~.

Please add the following new claims:

17. (New) A device as in claim 1, wherein said optically active material for the said cladding layer comprises a dielectric material doped to produce optical gain at a resonant wavelength of said disk-shaped resonator.

18. (New) A device as in claim 17, wherein said dielectric material comprises silicon dioxide.

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19. (New) A device as in claim 17, wherein said dielectric material is doped with erbium.

20. (New) A method, comprising:

introducing light into an inactive silicon waveguide core of an optical ring resonator which has an optically active waveguide cladding for the inactive silicon waveguide core;

optically pumping the waveguide cladding to amplify resonant light guided in the optical ring resonator;

rotating the optical ring resonator; and

measuring an optical output of the optical ring resonator to determine a rate of rotation of the optical ring resonator.

21. (New) A method as in claim 20, wherein the measurement of the optical output is a measurement of an intensity of light caused by interference of counter propagating beams in the optical ring resonator.

22. (New) A method as in claim 20, further comprising using a phase modulation in measuring the optical output.

23. (New) A method as in claim 20, further comprising tuning an effective length of the optical ring resonator in measuring the optical output.

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24. (New) A method as in claim 20, wherein the measurement of the optical output includes measuring a wavelength dependence in the optical output on the rate of the rotation.

25. (New) A device, comprising:

a semiconductor material fabricated to comprise a waveguide core and a microelectronic structure;

a waveguide cladding forming a waveguide resonator with said waveguide core, said waveguide cladding made of an optically active dielectric material to amplify resonant light guided in said waveguide core when optically pumped by a pump beam; and

a pump source to produce the pump beam to said waveguide cladding.

26. (New) A device as in claim 25, wherein the semiconductor material is silicon.

27. (New) A device as in claim 25, wherein the optically active dielectric material comprises doped silicon dioxide.

28. (New) A device as in claim 27, wherein said doped silicon dioxide comprises erbium.

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29. (New) A device as in claim 25, wherein the pump beam is resonant in said waveguide resonator to increase an effective overlap length with the resonant light being amplified.

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